NIDACR
9/29/97

THE IMPACT OF A FAMILY EMPOWERMENT INTERVENTION ON TARGET YOUTH RECIDIVISM: A ONE YEAR FOLLOW-UP*

Richard Dembo, Ph.D.
Criminology Department
University of South Florida
4202 E. Fowler Avenue
Tampa, FL 33620

Gabriela Ramirez-Garnica, M.P.H.
Department of Epidemiology and Biostatistics
College of Public Health
University of South Florida
Tampa, FL 33620

James Schmeidler, Ph.D.
Departments of Psychiatry and Biomathmatical Sciences
Mt. Sinai School of Medicine
One Gustave L. Levy Place
New York, N.Y. 10003

Kimberly Pacheco, B.A.
Youth Support Project
Agency for Community Treatment Services, Inc.
Tampa, FL 33604

* The preparation of this manuscript was supported by Grant #1-R01-DA08707-03, funded by the National Institute on Drug Abuse. We are grateful for their support.

September 1997

ACKNOWLEDGEMENT

We should like to thank Dr. C. Hendricks Brown and Ms. Kathleen A. Cervenka for their past contributions to this project. Great thanks are due to project Field Consultants Timothy Harris, John Thomas, Traci Kasun and Traci Merritt for their hard work. We are deeply grateful to project clinical staff, Dr. Joan Chase, Dr. Stuart Novick and Ms. Kathryn Lamson, for their rich contribution to our work. We wish to acknowledge Ms. Polly Borden and Mr. Robert Seifried for their creative software programming, permitting user friendly, on-line data entry and retrieval of project data. We are grateful for the assistance of Dr. Werner Baumgartner. We deeply appreciate the support of Mr. Darrell Manning, supervisor of the Juvenile Assessment Center; he has been a great resource to our work. We are also grateful for the support of Mr. Richard Brown, ACTS, Inc. Director of Planning and Evaluation. We deeply appreciate Ms. Marianne Bell's word processing this manuscript.

ABSTRACT

We report the results of the impact of a Family Empowerment Intervention on twelve months recidivism among youths processed at the Hillsborough County Juvenile Assessment Center. Promising results are obtained, with nonserious offender (diversion) cases being especially likely to benefit from this intervention.

INTRODUCTION

There is an urgent need to expand intervention services to address the multiple problems often experienced by youths entering the juvenile justice system and their families. Further, service delivery strategies need to overcome the barriers experienced by minority and inner city youth and families in accessing and utilizing mental health and substance misuse services (Arcia, Keyes, Gallagher & Herrick, 1993; Sirles, 1990; Tolan, Ryan & Jaffe, 1988). In the absence of receiving effective intervention services, many youths entering the juvenile justice system will consume a large and growing amount of local, state and national criminal justice and health resources as they grow older (Institute for Health Policy, 1993; Dembo, Williams, Wish & Schmeidler, 1990). Early intervention holds promise of reducing the probability troubled youths will continue criminal and high health-risk behavior into adulthood (Klitzner, Fisher, Stewart & Gilbert, 1991).

Many youths entering the juvenile justice system are experiencing multiple personal, educational and family problems (Dembo, Turner, Schmeidler, Chin Sue, Borden & Manning, 1996). Among the problems most consistently reported by researchers are: physical abuse (Dembo, Williams, Berry, Getreu, Washburn, Wish, Schmeidler & Dertke, 1988), sexual victimization (Mouzakitis, 1981; Dembo, Williams, La Voie, Berry, Getreu, Wish, Schmeidler & Washburn, 1989), poor emotional/psychological functioning (Teplin and Swartz, 1989; Dembo, Williams, Berry, Getreu, Washburn, Wish, & Schmeidler, 1990a), poor educational functioning (Dembo, Williams, Schmeidler & Howitt, 1991) and alcohol and other drug use (US Department of Justice, 1983a,b; Dembo et al., 1990a). Many of these youths' difficulties can be traced to family alcohol/other drug use, mental health or crime problems which began at an early age (Garbarino & Gilliam, 1980; Dembo, Williams, Wothke, Schmeidler & Brown, 1992). The

developed for these youths and their families. Further, juvenile justice agencies in most jurisdictions have limited resources for providing treatment services, and many youths entering the

low cost, effective efforts are needed in which staff working with delinquent youth and their families are trained to provide intervention services, and, where indicated, to link them with other

Such an approach holds promise of improving services available to various high risk youths and their families. this strategy is of especial benefit to Black and Hispanic families, who

than Anglo families (Arcia, Keyes, Gallagher & Herrick, 1993). Minority and inner-city youths are being socialized in communities and families that are often economically and socially stressed. The

delinquency/crime (Nurco, Balter, & Kinlock, 1994) and impedes their development as socially responsible and productive adults (Le Blanc, 1990).

ecological systems view (Bronfenbrenner, 1979; Garbarino & Gilliam, 1980) are being implemented in various parts of the U.S. (e.g., Rahdert & Czechowicz, 1995; Szapocznik &

addressing the needs of juvenile offenders and their families (Henggeler and Borduin, 1990; Henggeler, Melton, Smith, Schoenwald & Hanley, 1993; Henggeler, Schoenwald, Pickrel,

community mental health centers, with trained therapists providing services in caseloads of 4 to 6 "at-risk youths" and their families for as long as 4 to 5 months. The family preservation focus of MST seeks to "empower parents to restructure their environments in ways that promote development" (Henggeler, Schoenwald, Pickrel, Brondino, Borduin & Hall, 1994, p. 21) by developing their parental competencies. From a structural family therapy perspective, an essential first step is to focus on the parent(s) in order to restructure the family and establish parental control. A second goal is to teach the parents how to use agencies and services, including schools, more effectively (Henggeler et al., 1994).

A related innovative intervention is represented by the Youth Support Project (YSP) in Tampa, Florida, a service delivery study funded by the National Institute on Drug Abuse, Division of Clinical Research. The goal of the project's Family Empowerment Intervention is to improve family functioning through empowering parents. As discussed in more detail in the next section, YSP services are provided by trained paraprofessional staff working under the guidance of licensed clinicians.

The present paper reports the results of an examination of the impact of the family empowerment services of the YSP on target youths' recidivism. It presents the first evaluation of this innovative service delivery effort. Additional papers are planned to study the effect of the project's family empowerment services on the youths' substance use and emotional/psychological functioning.

THE YOUTH SUPPORT PROJECT

As discussed in more detail elsewhere, the YSP is implementing a systems oriented approach to family preservation: a home based Family Empowerment Intervention (FEI) (Cervenka, Dembo & Brown, 1996). The YSP is a five year project, funded by the National Institute on Drug Abuse, which is now in its fourth year. This innovative experimental, prospective longitudinal study, involves four interview data collection waves and recidivism analyses.

Families involved in the project are randomly assigned into one of two groups: the Extended Services Intervention (ESI) or the Family Empowerment Intervention (FEI) group. ESI group families receive monthly phone contacts from the project Research Assistants (RAs) and FEI group families receive personal visits from project Field Consultants (FCs).

Project FCs visit families to work on the following goals: (1) to restore the family hierarchy (parents, children, etc.); (2) to restructure boundaries between parents and children; (3) to encourage parents to take greater responsibility for family functioning; (4) to increase family structure through implementation of rules and consequences; (5) to enhance parenting skills; (6) to have parents set limits, expectations and rules that increase the likelihood the target youth's behavior will improve; (7) to improve communication skills among all family members; (8) to improve problem-solving skills, particularly in the target youth; and (9) where needed, to connect the family to other systems (e.g., school, church, community activities). It is expected that empowering parents will result in improvements in the target youth's behavior in a more prosocial direction and in his/her psychosocial functioning -- including reduced recidivism.

FEI families are expected to participate in three, one hour family meetings per week for approximately ten weeks. All household members (i.e., persons living under the same roof as the target youth) are expected to participate in these meetings. Both FEI and ESI families have twenty-four hour a day, seven days a week access to YSP staff, as well as to information on various community resources (which we call "system fit") via a project developed agency and services resource file with equal emphasis on quality services. This resource enables YSP staff to provide families with information about different community agencies; and to assist families in obtaining appropriate referrals to meet their needs.

Families do not know at the outset which intervention they will receive, and those consenting to participate in the project begin with an enrollment process which is essentially a recruitment into the randomized field trial. Following baseline data collection, families are randomly assigned to either FEI or ESI. Both of these interventions are described to the family using standard informed consent procedures. Once randomization is accomplished, contact continues as a way of reducing the chances of family dropout. We communicate that we will stay in contact with the families to the end of the study and contact these families on a monthly basis during the entire duration of the field trial. For ESI families, the monthly telephone contacts obtain information on address changes; FEI monthly contacts collect address change data plus information on family functioning.

A distinctive feature of this intervention is that the families are served by Field Consultants, who are not trained therapists--although they are trained by, and perform their work under the direction of, licensed clinicians. The choice of paraprofessionals is based on a cost effectiveness argument, and is supported by experimental research indicating that, at least for

some treatments, paraprofessionals produce outcomes that are better than those under control conditions, and similar to those involving professional therapists (Christensen & Jacobson, 1994; Weisz, Weiss, Han, Granger & Morton, 1995). Further, by requiring less previous therapy training, the FEI will make it more likely that this treatment can be funded, given the financial limitations now facing agencies which provide services to juvenile offenders.

Youths processed at the Hillsborough County Juvenile Assessment Center (JAC) (Dembo & Brown, 1994) who are arrested on misdemeanor or felony charges are sampled for inclusion in the project. Ultimately, 720 Black, Latino and Anglo, male and female, arrested youths processed at the Tampa JAC and their families will be involved in the study. Three hundred and sixty youths and their families will be randomly assigned to receive FEI, and 360 youths and their families will be randomly placed in the ESI group.

METHOD

Demographic, Educational, and Treatment History Description of the Youths

Youths are stratified by gender, race and ethnicity before being randomly selected for possible inclusion in the Youth Support Project. The data reported in this paper include youths entering the YSP during its first year. Each youth completed an initial in-depth assessment prior to being randomly assigned to the FEI or ESI group.

As Table 1 shows, most youths were male (61%), and averaged 14 years of age. Sixty-four percent of the youths were white; 33 percent were black. Thirty-one percent of the youths were Hispanic. Twenty percent of the youths indicated they lived with both their biological

parents; and, in addition, 64 percent indicated they resided with either their mother only (47%), mother and another adult (6%) or mother and stepfather (11%).

Information on the occupational status of the household chief wage earner or other sources of household income (derived from Fishburne, Abelson and Cisin, 1980), a measure of socio-economic status, highlighted the low to moderate SES of the youths' families. For example, among the youths for whom we had codable data (n = 77), only nine percent of the chief wage earners held an executive, administrative/managerial, or professional specialty type position; 60 percent held unskilled, semiskilled or low/moderate skilled service occupations; and 18 percent of the youths' households were supported by public funds.

Insert Table 1 About Here

Further information indicates that, although most of the youths (84%) were still attending school, sizable proportions of them were experiencing educational problems. For example, forty percent of the youths indicated they had been placed in a special educational program (e.g., Educationally Handicapped, Severe Learning Disorder); and 55 percent noted they had repeated a grade in school. Relatedly, most youths (57%) lagged one or two grade levels behind the grade level that would be expected based on their chronological age (Table 1).

Relatedly few youths reported receiving any treatment for a mental health or substance abuse problem. Twenty-percent of the youths claimed they ever received mental health care and only six percent reported any substance abuse treatment (Table 1).

Arrest Charges Upon Entering JAC

Almost all the youths entered JAC as a result of being taken into custody on new charges. As Table 2 shows, most of the charges on the youths were felony property charges (especially burglary, grand larceny, and auto theft). Property misdemeanor charges (e.g., retail theft) ranked second (40%). Relatively few youths were arrested on felony or misdemeanor drug charges.

Insert Table 2 About Here

REFERRAL HISTORY

Information obtained from the Florida Department of Health and Rehabilitative Services (HRS) indicated 31 percent of the youths were referred to juvenile court at least once for property felony offenses, 38 percent for misdemeanor property offenses, 22 percent for misdemeanor public disorder offenses, and 20 percent for misdemeanor violence offenses (Appendix A gives a detailed list of the various referral categories).

The youths were victims as well as offenders. As Table 3 shows, 20 percent had been referred to HRS for being physically abused and 18 percent for neglect.

Insert Table 3 About Here

Principal Components Analysis of the Delinquency Referral Variables

A principal components analysis was completed on the delinquency referral variables to see how they clustered. The initial solution, involving three factors with eigenvalues greater than 1.0 (Kaiser's criterion) (eigenvalues = 2.26, 1.23, 1.06) was rotated to varimax criteria for factor clarity. As Table 4 shows, three factors were identified in these data: (1) property and public disorder offenses, (2) violence offenses, and (3) drug offenses. Based on these results, regression factor scores were calculated (Kim and Mueller, 1978). The higher the score on each factor, the more frequent the referrals.

Insert Table 4 About Here

Family Problem Characteristics

The youths tend to come from families who have experienced a number of difficulties in psychosocial functioning. Thirty-three percent of the youths reported that at least one member of their family or household family, besides themselves, had an alcohol abuse problem, 24 percent noted a family or household family member had another drug abuse problem (most frequently marijuana/hashish), and 26 percent indicated a family or household member had experienced an emotional or mental health problem (Table 5).

In addition, members of the youths' families or household families have had different types of experience with the juvenile or adult justice systems. Over 60% of the youths' claimed at least one member of their family or household family, besides themselves, had been arrested, and from

31% to 53% reported that a member of their family/household family had been held in jail/detention, adjudicated delinquent or convicted of a crime or put on community control or probation. Further, 26% of the youths noted at least one family member or household family member had been sent to a training school or prison.

Insert Table 5 About Here

Principal Components Analyses the Family Problem Characteristics

A principal components analysis was completed on the family member alcohol abuse, other drug abuse and emotional/mental health problem variables to see how they clustered. One main principal component was identified in this analysis. As Table 6 shows, each variable was significantly loaded on this factor. A summary, regression factor score (Kim & Mueller, 1978) was created for further analyses. The higher the score the more the family alcohol, other drug and emotional/mental health problems.

Insert Table 6 About Here

A principal components analysis was also completed on the family member justice system contact variables. Table 7 presents the one main principal component that was identified in these data, on which each of the variables was significantly loaded. A regression factor score was

created for further analysis (Kim & Mueller, 1978). The higher the scores, the more different types of contact with the justice system.

Insert Table 7 About Here

Friends' Substance Use and Involvement with the Police or Courts

As Table 8 shows almost 55% of the youths noted that one or more of their close friends had used marijuana/hashish, and 21% claimed at least one close friend used hallucinogens during the year prior to their initial interview. In addition, large proportions of the youths' close friends had some type of contact with the legal system. Sixty-six percent of the youths claimed at least one of their close friends had been arrested, and from 44% to 51% indicated that one or more of their close friends had been held in jail or detention, adjudicated delinquent or convicted of a crime, or been put on community control or probation. In addition, 19% of the youths reported that at least one of their close friends had been sent to a training school or prison (Table 8).

Insert Table 8 About Here

Principal Components Analysis of the Friends Substance Use and Justice System Contact Variables

Separate principal components analyses were completed on the friends' substance use and justice system contact variables as a data reduction technique and to see how they clustered. Table 9 shows the one main principal component that was identified in this analysis. Each of the substance use variables was significantly loaded on this factor. Regression factor (Kim & Mueller,

1978) were created as a summary measure for further analysis. The higher the score, the more the reported friends' use of various substances.

Insert Table 9 About Here

A principal components analysis was also performed on the close friends' justice system contact variables. Table 10 presents the one main principal component identified in these data, on

1978) that were created were scored such that the higher the score, the more the different types of contact with the justice system.

Insert Table 10 About Here

Physical Abuse

Drawing upon the work of Straus and his associates (Straus, 1979, 1983; Straus, Gelles,

experiences. In particular, the youths were asked whether they had ever (1) been beaten or *really*

(39%); (3) been beaten or hit with something "hard" (like a club or stick) (16%); (4) been shot with a gun, injured with a knife, or had some other "weapon" used against them (7%); (5) been

hurt badly enough to require (need) a doctor or bandages or other medical treatment (13%); and (6) spent time in a hospital because they were physically injured (5%).

Normative data on this behavior are difficult to obtain. However, available information from the 1976 national survey on family violence (Gelles, 1979; Straus, Gelles, & Steinmetz, 1980) found parent-to-child violence prevalence rates for being hit with something (20%), beat up (4%), threatened with a knife or gun (3%), or using a knife or gun (3%) that were lower than those reported by the youths we interviewed. In addition, the youths reported physical abuse experiences are consistent with the rates of such experiences reported by juveniles involved in the Tampa longitudinal study of juvenile detainees (Dembo, Williams, Berry, Getreu, Washburn, Wish & Schmeidler, 1990).

We probed the validity of the youths' self-reports of physical abuse by determining whether youths with a record of having been referred to the Department of Health and Rehabilitative Services (HRS) on one or more occasions for physical abuse reported physical abuse in the interview. Seventy-five percent of such youths reported experiencing one or more of the six specific modes of physical harm.

Principal Components Analysis of the Physical Abuse Variables

As a data reduction procedure (Kim & Mueller, 1978), a principal components analysis was undertaken on the intercorrelations of the six physical abuse items to see how they clustered. One principal factor with an eigenvalue greater than 1.0 was identified. Each of the physical abuse items loads significantly and positively on the principal factor. Table 11 presents these results.

Insert Table 11 About Here

On the basis of these results, regression factor scores were created (Kim & Mueller, 1978). The higher the score, the more different modes of physical harm claimed.

Drawing upon the work of Finkelhor (1979), the youths were asked a number of the questions regarding their sexual experience. Each youth was asked if he or she ever had a sexual

answering "yes" to this question were asked how many of these experiences they had had.

Consistent with Finkelhor's (1979) operational definition, all youths who were 13 years of

considered to have been sexually victimized. In addition, youths who had a sexual experience at any age and who reported they were forced or threatened, had reacted to the experience with fear

considered to have been sexually victimized. In line with this operational definition, consenting relationships between, for example, youths aged 14 to 17 years and an adult would not be

once in their lives (47% of the females and 22% of the females, df = 1, chi square = 7.91, $p < .01$).

This rate of sexual victimization is comparable to that Mouzakitis (1981) found among the Arkansas training school girls he studied. It is also similar to the rate reported by youths involved in the Tampa longitudinal study of juvenile detainees (Dembo, Williams, Berry, Getreu, Washburn, Wish & Schmeidler, 1990a).

Self-Reported Alcohol, and Illicit Drug Use Prior to Initial Interview

A number of questions on substance use were adopted from the National Household Survey on Drug Abuse (NHSDA) (National Institute on Drug Abuse, 1985) to determine the youths' use of various categories of substances: tobacco, alcohol, marijuana/hashish, marijuana in blunt form, inhalants, hallucinogens, cocaine, heroin and the nonmedical use of barbiturates and other sedatives, tranquilizers, stimulants, and analgesics. The youths' use of tobacco is not considered in this paper.

Alcohol Use

The survey questions regarding the youths alcohol use probed their age of first use, recency of use, the number of days used in the past month and the number of times the youth got very high or drunk on alcohol in the past year. Our analysis of the alcohol use data focused on the youths' responses to a question probing the number of times in the past twelve months they reported being very high or drunk on alcohol. As can be seen from the results presented in Table 12, 24 percent of the youths reported they had gotten very high or drunk on alcohol 12 or more days in the preceding 12 months.

Insert Table 12 About Here

Questions concerning the youths illicit drug use or nonmedical use of psychotherapeutic drugs probed their age of first use, lifetime frequency of use, and recency of use. The present

The youths reported relatively high lifetime rates of illicit drug use. In particular, as Table 13 shows, 24% claimed to have used marijuana/hashish, and 11% marijuana in blunt form, 100 or

lives.

The drug use prevalence rates shown in Table 15 are, with the exception of the

interviewed in the 1994 National Household Survey on Drug Abuse (Substance Abuse and Mental Health Services Administration, 1996). The NHSDA survey found the following

64% (vs. 14% in the NHSDA sample), inhalants - 8% (vs. 7%), hallucinogens - 22% (vs. 4%), cocaine - 16% (vs. 2%), heroin - 1% (vs. 0.3%), nonmedical use of sedatives - 2% (vs. 1%),

Insert Table 13 About Here

Hair Testing for Substance Use

An important part of the data gathering at the youths' interviews is the collection of hair specimens for analysis for recent drug use. The specimen collection protocol involves collecting about a half inch of hair across the finger and cutting these strands as close to the scalp as possible.

The collected hair specimens were collected and prepared for shipment following the established protocol of Psychemedics Corporation in Culver City, California. Psychemedics Corporation provided the sample collection kits, training and handling materials, and technical advice on gathering and shipping the specimens. A local drug treatment program, Operation PAR, was helpful in providing in-service training for project staff on collecting the specimens.

Upon receipt of the hair specimens, Psychemedics technicians weigh them and evaluate any cosmetic damage to the hair by a staining process. Following this process, the hair samples are weighed, and washed once for fifteen minutes in isopropanol and three times for thirty minutes each in phosphate buffer at ph=5.5. The hair is then converted into a liquid state by a patented digestion method. The resulting digested sample is assayed by radioimmunoassay (RIAH®) for presence of specific drugs. Psychemedics performed RIAH® testing of the hair samples for past 90 days use of the following substances: cocaine, opiates, PCP, methamphetamines, and marijuana. The cutoff for a positive for cocaine and methamphetamines was 5 ng/10 mg hair; for

PCP it was 3 ng/10 mg of hair; for opiates it was 2 ng/10 of hair; and for marijuana it was 10 pg carboxy - THE equivalents/10 mg of hair. In a few cases where hair was not available, fingernail

In the case of cocaine and opiates, the antibody used in the radioimmunoassay does not produce any false positive results. With the marijuana radioimmunoassay, between 5 to 10 percent

the assay. False negatives are determined by the values of the cutoff level. For cocaine, individuals using less than 1 to 3 lines of cocaine per month are reported as negative. For opiates, at the

scored as negative. For marijuana, because of its 100,000 lower concentration in hair than cocaine, it appears that only the heavy and moderate but not the light user is identified by the hair

(Baumgartner and Hill, 1996).

The results of the hair/nail testing are striking. As Table 14 shows, 45 percent of the

drug (most often marijuana), 13 percent were positive on two drugs (most often marijuana and cocaine), and 2 percent were positive on marijuana, cocaine and opiates. Overall, 39 percent of

finding is similar to the results of the Juvenile Assessment Center's on-site EMIT® urine testing program. On the other hand, the RIAH cocaine results are much higher than the 4 to 6 percent

surveillance window for detection for hair than urine.

Insert Table 14 About Here

Self-Reported Delinquent Behavior

Drawing upon the work of Elliott, Ageton, Huizinga, Knowles & Canter (1983), we probed the youths' delinquent behavior in the year prior to their initial interviews by asking how many times they engaged in 23 delinquent behaviors. In addition, as a check, youths noting they had engaged in a given act ten or more times were asked to indicate how often they participated in this behavior (once a month, once every two or three weeks, once a week, two to three times a week, once a day, or two to three times a day). In addition, for each of the 23 delinquent - behaviors in which the youth claimed to have engaged, he/she was asked the age during which the act first occurred.

Based on the youths' claimed frequency of participation in the various delinquent acts, we developed the following four summary indices of the youngsters delinquent involvement used by - Elliott and his associates (1983):

-- General Theft: stole a motor vehicle, stole something worth more than $50, bought stolen goods, stole something worth less than $5, stole something worth between $5 and $50, broke into a building or vehicle, joyriding.

-- Crimes Against Persons: aggravated assault, gang fights, hit a teacher, hit a parent, hit a student, sexual assault, strong armed students, strong armed teachers, strong armed others.

-- Index crimes: aggravated assault, sexual assault, gang fights, stole a motor vehicle, stole something worth more than $50, broke into a building or vehicle, strong armed students, strong armed teachers, strong armed others.

-- Total Delinquency: the sum of the reported frequency of participation in the 23 delinquent activities.

In addition, we constructed a drug sales index for analyses as follows:

-- Drug Sales: sold marijuana or hashish, sold cocaine or crack, sold other hard drugs such as heroin or LSD.

Table 15 shows the self-reported delinquency frequency rates for the 119 youths during the year prior to their interviews. As can be seen, high prevalence rates are reported for index offenses (60%), crimes against persons (65%), general theft (85%), drug sales (31%), total delinquency (96%). Further, from 2 to 19% of the youths reported engaging in the offenses represented by the various scales 100 times or more -- some reported many hundreds of offenses.

Since the range of responses to the items comprising the five self-reported delinquency scales was large, ranging from no activity to hundreds (and in a few cases thousands), analysis of the frequency data as an interval scale was not appropriate as a measure of involvement in delinquency/crime. Raw numbers of offenses do form an interval scale, which might use useful if one were predicting crime rates for populations. However, the difference between no offense and one offense is not the same as the difference between 99 and 100 offenses in terms of involvement. A transformation was employed so that equal intervals on the transformed scale would represent -- equal differences in involvement. We interpreted the differences between one

and ten, 10 and 100, and 100 and 1000 offenses as being comparable. Accordingly, we log transformed the numbers of offenses for each scale to the base 10.

For any base, logarithms exist for all positive numbers. The choice of base does not matter, if the logarithms are analyzed by a statistical procedure invariant under linear transformation, such as analysis of variance, multiple regression, discriminant analysis, or factor analysis. However, regardless of the base, the logarithm of zero does not exist. Some other method must be employed to determine the score assigned to no offenses. For any base, zero is the logarithm of the value one, and one is the logarithm of the base. If the difference from "base" offenses (ten in this study) to one offense is assigned the difference in logarithm scores of one and zero, this provides a unit of measurement for assigning a score even lower than zero -- a negative number -- to no offenses. In this study a score of minus one was assigned. This evaluates the difference between no offense and one offense as equal in importance as the difference between one offense and ten, or ten offenses and 100.

Insert Table 15 About Here

Emotional/Psychological Functioning

The SCL-90-R (Derogatis, 1983) was used to assess the youths' emotional/ psychological functioning. The youths' replies to the items yielded T scores on nine symptom dimensions: (1) somatization -- distress arising from perceptions of bodily dysfunction; (2) obsessive-compulsive -- symptoms that are closely identified with the standard clinical syndrome of the same name; (3) interpersonal sensitivity -- feelings of personal inadequacy and inferiority, particularly in comparisons with others; (4) depression -- a broad range of manifestations of clinical depression; (5) anxiety -- a set of symptoms and signs that are associated clinically with high levels of manifest anxiety; (6) hostility -- thoughts, feelings, or actions that are characteristic of the negative affect state of anger; (7) phobic anxiety -- persistent fear of a specific person, place, object, or situations, characterized as irrational and disproportionate to the stimulus, leading to avoidance or escape behavior; (8) paranoid ideation -- a disoriented mode of thinking; and (9) psychoticism -- includes a range of items tapping functioning from mild interpersonal alienation to dramatic evidence of psychosis. The SCL-90-R has a long developmental history, has very good psychometric properties, and is widely used in clinical settings. It is easily administered (average test time is 12 to 15 minutes) and interpreted (Derogatis, 1983).

A T-score means of the nine SCL-90-R scales are given in Table 16. The results indicate the average T-scores for the nine scales to be within the normal range, without any indication of pathology.

A principal components analysis was performed on the SCL-90-R T-scores for the nine scales to see how they clustered. Table 17 shows the many principal component identified in these

& Mueller, 1978) were created summarizing these data. The higher the score, the more emotional/psychological problems.

Insert Table 17 About Here

Measuring Subsequent Arrests for Delinquent/Criminal Offenses

For the analyses reported here, official records of contact with the juvenile justice system,

the Hillsborough County Jail System, and State Attorney of Hillsborough County, or involvement in the Florida Department of Corrections were obtained for each youth during the 12 months

In line with our previous work (Dembo, Williams, Schmeidler & Christensen, 1993), we developed summary measures for the following offense categories: :

murder/manslaughter, robbery, sex offenses, aggravated assault; arson,

burglary, auto theft, larceny/theft, stolen property offenses, damaging property offenses; *drug felonies:* drug offenses; *violent misdemeanors:* sex offenses, nonaggravated assault; *property misdemeanors:* larceny/theft, stolen property offenses, damaging property offenses; *drug misdemeanors:* drug offenses; *public disorder misdemeanors:* public disorder offenses, trespassing offenses; and total arrests. For all offense categories except total arrests, if an offense was of indeterminate seriousness, it was scored as 1/2 in each of the corresponding felony and misdemeanor summary measures.

Table 18 shows the prevalence rates of referral/arrest for the seven offense categories for FEI or ESI group youths 12 months following the date of their random assignment into each interment in group.

Insert Table 18 About Here

Transformation of Data on Numbers of Arrests

Before analyzing number of referrals/arrests, these data were transformed to reduce the skewed scores of very high numbers of offenses and long periods of risk without an offense. The resulting scores emphasize the difference between offenders and nonoffenders, and deemphasize the differences among offenders' rates and amount of time at risk of nonoffenders. All offenders were assigned positive scores (+ 1 for one offense and all nonoffenders negative scores (- 1 for no offense in 1 year at risk).

The difference between no offense and one offense is not the same as the difference between 10 and 11 offenses in extent of involvement in criminal activity. Hence, a transformation was used so that equal intervals on the transformed scales would represent equal differences in criminal involvement. We interpreted the differences between 1 and 10, 10 and 100, and 100 and 1,000 offenses as being comparable. Accordingly, we employed a logarithmic transformation, assigning the score to more than one offense per year, one plus the logarithm of the number (to the base 10). If there was an offense, there was no correction for time at risk. Since reduced time at risk was almost invariably due to incarceration because of offenses, correction for time at risk would have penalized offenders twice. If there was no offense, the score was the negative of the fourth root of the years at risk. No offenses in 12 months at risk was assigned the score -1.

The magnitude of the correlations among the seven recidivism variables was low. The mean of the intercorrelations was .167 (range r = -.077 to .482).

RESULTS

The major focus of our analyses was to determine the impact of assignment of the FEI and ESI groups on the youths' recidivism during the 12 months following their random assignment. Accordingly, separate stepwise regression analyses, involving mean substitution for missing data, were performed for recidivism variables for total arrests, violent felony offenses, property felony offenses, drug felony offenses, violent misdemeanor offenses, property misdemeanor offenses, drug misdemeanor offenses and public disorder misdemeanor offenses.

Strategy of Analysis

For each regression analysis, the various predictor variables were introduced in the following historical order:

1. Demographic variables (age, gender, ethnicity, race, living situation, family members' alcohol, other drug abuse or mental health problem, and family member contact with the justice system);
2. Lifetime history of physical abuse, sexual victimization and frequency of marijuana/hashish blunt, hallucinogen and cocaine use;
3. Lifetime history of referrals to juvenile court or delinquency charges or for dependency (i.e., physical abuse, sexual exploitation/victimization, neglect), lifetime reported treatment for a substance abuse or mental health problem, and the lag between the youths' grade level and their chronological age;
4. Friends' substance use and involvement with the justice system;
5. Self-reported delinquency in the past year and planned frequency of getting drunk or very high on alcohol in the past year (in an effort to reduce the multiple predictors of the same experience in the analysis the youths' total delinquency in the past year was employed; each of the other delinquency variables was highly correlated with this measure [average correlation .691];
6. RIAH® hair test results for marijuana, cocaine and opiates;
7. Arrest charges upon entering the juvenile assessment center (i.e., violence offenses, property offenses, drug offenses or public disorder misdemeanors) (In constructing the violence, property and drug measures, felony charges were weighted double.);

8. Emotional/psychological functioning as measured by the SCL-90-R (Derogatis,

9. Assignment to the ESI or FEI group.

identifying the relative power of the various predictor variables other than assignment to the ESI or FEI group, in accounting for the youths' recidivism, than in controlling for them before

of the non-group placement predictor variables is limited to descriptive terms.

Predicting Subsequent Arrests for the Various Offense Categories

for violent felony offenses, property felony offenses, drug felony offenses, violent misdemeanor offenses, drug misdemeanor offenses, and public disorder misdemeanor offenses during the 12

respectively. The overall R values of the various predictor variable account for 38% to 56% of the variance in the offense categories. However, the adjusted R values for each of these regression equations is lower (range 13% to 37%). This R reduction is due to the shrinkage resulting from the relatively small number of cases involved in this analysis, compared to the number of predictor variables. The R^2

misdemeanor offense categories are statistically significant; and the R^2

the felony offense categories are marginally statistically significant ($.10 > p > .05$).

Insert Tables 19 to 26 About Here

In regard to the various blocks of predictor variables, the blocks of variables containing the youths' delinquency and dependency referral history and their demographic and family problem characteristics account for 56% (for violent felonies) to 78% (for public disorder misdemeanors) of the R^2 values for each of the regression equation.

In contrast, the R^2 values for the variable reflecting ESI or FEI group assignment are much lower, ranging from <.001 (for property felonies) to .015 (for public disorder misdemeanors). Importantly, however, for violent misdemeanors, the F ratio for R^2 change (0.011) for the group effect (1.80) is in the marginally significant range for a one-tailed test; and for public disorder misdemeanors the F ratio for R^2 change (0.015) for the group effect (2.21) is marginally statistically significant. In line with the key hypothesis of this project, in regard to violent misdemeanors and public disorder misdemeanors, FEI group youths were <u>less likely</u> to be arrested for these offenses, compared to ESI group youths. We shall have more to say about these results in the conclusion section.

Examination of the Effect of Case Type on Recidivism

An additional analysis was performed to determine whether youths with nonserious offenses histories benefitted more from FEI services, as reflected in lower recidivism rates, than youths with serious offense records. This analysis involved examining the interactive effect of the youths' case type x their assignment to the FEI or ESI groups on their recidivism in the various

offense categories. This comparison was made possible by the existence of the JAC case management unit.

The major purpose of the JAC misdemeanor case management unit is to review the arrest histories and current charges of youths arrested on misdemeanor offenses to determine their eligibility for involvement in a nonjudicial diversion program: arbitration or the Juvenile Alternative Services Program (JASP). Youths meeting the criteria for arbitration or JASP are recommended to one of these respective misdemeanor case managers; their recommendations are forwarded to the state attorney's office for approval. Experience indicates the vast majority of the case managers' recommendations are approved by the state attorney's office.

Admission of guilt is required for a youth to be accepted in either diversion program. The arbitration program involves a trained arbitrator (not a judge) who hears the case against a youth and obtains relevant information from the youth, the victim and arresting officer. On the basis of this information, the arbitrator decides on sanctions against the youth. These sanctions can include community service hours, participation in a counseling program, paying restitution, or a combination of these sanctions. JASP is a 60-day program, which provides immediate sanctions to misdemeanor offenders. It has a number of program components: community work service (where youths are assigned to complete a number of community service hours), victim restitution (where youths make monetary or other reimbursement to the victim), and counseling (which provides short-term individual, adolescent group and family counseling). JASP counselors monitor youth fulfillment of their required sanctions.

Fifty-three percent of the 119 youths were assigned by JAC staff to receive diversion services; 47 percent were referred to juvenile court. Twenty-nine of the 119 youths (24%) were

diversion cases who received FEI services. The case type variable was dummy coded for our interactive analysis, with 1 indicating a diversion (or minor offender type) case.

In these analyses, the case type was introduced as a main effect in the same step as the JAC arrest charges (step 7). Following entry of the main effect variables, a case type x ESI or FEI group assignment term was entered into the regression analysis as a last step.

These important results indicated that, compared to FSI youths, FEI youths had relatively less recidivism on violent felony changes (t value of beta = -2.21, $p < .05$ for a two-tailed test; F for R^2 change (0.035) = 4.89, df = 1,81, $p < .05$) and any new offense (t value of beta = -1.92, $p = .058$; F for R^2 change (0.021) = 3.69, df = 1,81, $.10 > p > .05$) among nonserious (diversion) than serious offenders. Tables 27 and 28 present these results. (Due to space concerns, the other tables reporting these results have been omitted. Copies are available from the senior author upon request.)

Insert Tables 27 and 28 About Here

CONCLUSIONS

Overall, the results indicate statistically significant, or marginally significant, relationships exist between the various predictor variables and the different recidivism measures. Although the R^2 values for the various regression analysis are respectable, the small ratio of cases to predictor variables produced adjusted R^2 values of relatively low magnitude.

The blocks of variables containing the youths' delinquency and dependency referral histories and their demographic and family problem characteristics accounted for most of the R^2 values. However, and importantly, after controlling for the other predictor variables, placement in the FEI of FSI groups was marginally significantly related to two of the recidivism measures.

These two marginally significant relationships were consistent with the major hypothesis of this project: compared to ESI youths, youths assigned to the FEI were arrested less often on violent misdemeanor and public disorder misdemeanor charges over the 12 month, post random assignment to group period. The results also indicate complicated effects exist between the nongroup effect predictor variables, FEI or ESI group assignment and the various recidivism measures. For example, in only one instance (the correlation [r] between FEI/ESI group assignment and arrests on property misdemeanor charges [r = -.075] is the simple correlation in the hypothesized direction.

In addition to the FEI main effects we identified, two important case type x group assignment interaction effects were uncovered. Our finding that, compared to FSI youths, FEI youths had relatively less recidivism on violent felony charges and any new offense among nonserious than serious offenders highlights the potential value of FEI services in reducing serious criminal behavior.

It is clear that additional 12 month recidivism analyses need to be performed involving more cases. At the time of writing this paper, 200 youths and their families were involved in the Youth Support Project, 80 of these cases having been involved in the project for less than one year. These new cases will be included in a planned, expanded one year recidivism analysis. Such analyses can be expected to provide firmer, more reliable evidence regarding the magnitude,

significance and direction of the FEI or ESI group placement effect on the youths' recidivism (two year and three year recidivism analyses are also planned.)

The hypothesis consistent group assignment effects are promising. Should the hypothesized, FEI effects on recidivism be confirmed in subsequent analyses, firmer evidence documenting the value of this intervention will have been obtained; and the attractiveness of implementing this cost efficient service in other sites increased.

JUVENILE COURT REFERRAL REASONS, BY CATEGORY

Violent Felonies

Murder/manslaughter
Attempted murder/manslaughter

Other felonious sex offenses
Armed robbery

Aggravated assault and/or battery

Violent Misdemeanors

Public Disorder Misdemeanors

and prowling)

Drug Misdemeanors

Misdemeanor violation of drug laws (excluding marijuana)
Misdemeanor marijuana offense
Possession of alcoholic beverage

Physical Abuse

hematoma

Bone fracture
Sprain/dislocation

Cuts/punctures/bites

Asphyxiation/suffocation/drowning
Intentional poisoning

(injury unknown)
Other physical abuse

Sexual Abuse

Sexual battery (incest)

Fondling/other sexual abuse

Other sexual exploitation (including prostitution)

Burglary (breaking and entering)
Auto theft

Receiving stolen property

Drug Felonies

Felony violation of drug laws (excluding

Felony marijuana offense

APPENDIX A (Continued)

Property Misdemeanors

Petty larceny (excluding retail theft)
Retail theft (shoplifting)
Receiving stolen property (under $100)
Criminal mischief (vandalism)

Neglect

Malnutrition/deprived of food
Failure to thrive
Deprived of clothing
Deprived of shelter
Medical neglect
Failure to provide medical care (religious reasons)
Unattended/unsupervised conditions hazardous to health
Abandonment
Other neglect

Mental Injury

Emotional abuse
Emotional neglect

Status Offenses

Local (intracounty) runaway
Runaway from other Florida county
Out of state runaway
Truancy
Beyond control

Source: Florida Department of Health and Rehabilitative Services, Children, Youth and Families, Client Information System: Selected Elements and Codes for Intake Staff.

REFERENCES

Arcia, E., Keyes, L., Gallagher, J.J. & Herrick, H. (1993). National portrait of sociodemographic factors associated with underutilization of services: Relevance to early intervention. Journal of Early Intervention, 17, 283-297.

Baumgartner, W. & Hill, V. (1996). Hair analysis for organic analytes: Methodology, reliability issues, and field studies. In P. Kintz (ed.)., Drug Testing in Hair. New York: CRC Press.

Bronfenbrenner, U. (1979). The Ecology of Human Development: Experiments by Nature and Design. Cambridge, MA: Harvard Univ. Press.

Cervenka, K.A., Dembo, R. & Brown, C.H. (1996). A family empowerment intervention for families of juvenile offenders. Aggression and Violent Behavior, 1, 205-216.

Christenson, A. & Jacobson, N.S. (1994). Who (or what) can do psychotherapy: The status and challenge of non-professional therapies. Psychological Science, 5, 8-14.

Dembo, R., & Brown, R. (1994). The Hillsborough County Juvenile Assessment Center. Journal of Child and Adolescent Substance Abuse, 3, 25-43.

Dembo, R., Turner, G., Schmeidler, J., Chin Sue, C., Borden, P. & Manning, D. (1996). Development and evaluation of a classification of high risk youths entering a juvenile assessment center. International Journal of the Addictions, 31, 303-322.

Dembo, R., Williams, L., Berry, E. Getreu, A., Washburn, M., Wish, E.D. & Schmeidler, J. (1990a). Examination of the relationships among drug use, emotional/psychological problems and crime among youths entering a juvenile detention center. International Journal of the Addictions, 25, 1301-1340.

Dembo, R., Williams, L., Berry, E., Getreu, M., Washburn, M., Wish, E.D., Schmeidler, J. and Dertke, M. (1988). The relationship between physical and sexual abuse and illicit drug use: A replication among a new sample of youths entering a juvenile detention center. International Journal of the Addictions. 23:1101-1123.

Dembo, R., Williams, L., La Voie, L., Berry, E., Getreu, A., Wish, E., Schmeidler, J. & Washburn, M. (1989). Physical abuse, sexual victimization and illicit drug use: Replication of a structural analysis among a new sample of high risk youths. Violence and Victims, 4:121-138.

Dembo, R., Williams, L., Schmeidler, J. & Christensen, C. (1993). Recidivism in a cohort of juvenile detainees. International Journal of the Addictions, 28, 631-657.

Dembo, R., Williams, L., Schmeidler, J. & Howitt, D. (1991). Tough Cases: School Outreach for At-Risk Youth. Washington, D.C.: U.S. Department of Education, Office of the Assistant Secretary for Educational Research and Improvement.

Dembo, R., Williams, L., Wish, E.D., & Schmeidler, J. (1990b). Urine testing of detained juveniles to identify high-risk youth. Washington, DC: U. S. Department of Justice. NCJ 119965.

Dembo, R., Williams, L., Wothke, W., Schmeidler, J. & Brown, C.H. (1992). The role of family factors, physical abuse and sexual victimization experiences in high risk youths' alcohol and other drug use and delinquency: A longitudinal model. Violence and Victims, 7, 245-266.

Derogatis, L.D. (1983). SCL-90-R administration, scoring and procedures manual. Towson, MD: Clinical Psychometric Research.

Elliott, D.S., Ageton, S.S., Huizinga, D., Knowles, B.A. & Canter, R.J. (1983). The prevalence and incidence of delinquent behavior: 1976-1980. Boulder, CO: Behavioral Research Institute.

Finkelhor, D. (1979). Sexually victimized children. New York: Free Press.

Fishburn, P.M., Abelson, H.I. & Cisin, I. (1980). National Survey on Drug Abuse: Main Findings-1979. Rockville, MD: National Institute on Drug Abuse.

Garbarino, J. & Gilliam, G. (1980). Understanding Abusive Families. Lexington, Mass.: Lexington Books.

Gelles, R.J. (1979). Family Violence. Beverly Hills: Sage.

Henggeler, S.W. & Borduin, C.M. (1990). Family Therapy and Beyond: A Multisystemic Approach to Treating the Behavior Problems of Children and Adolescents. Pacific Grove, CA: Brooks/Cole.

Henggeler, S.W., Melton, G.B., Smith, L.A., Schoenwald, S.W. & Hanley, J.H. (1993). Family preservation using multi-systemic treatment: Long term follow-up to a clinical trial with serious juvenile offenders. Journal of Child and Family Studies, 2, 283-293.

Henggeler, S.W., Schoenwald, S.K., Pickrel, S.G., Brondino, M.J. Borduin, C.M. & Hall, J.A. (1994). Treatment Manual for Family Preservation Using Multisystemic Therapy. Charleston, SC: Medical University of South Carolina.

Hindelang, M.J., Hirschi, T., & Weis, J. (1981). Measuring delinquency. Newbury Park, CA: Sage.

Institute for Health Policy (1993). Substance Abuse: The Nation's Number One Health Problem. Waltham, MA: Institute for Health Policy.

Kim, J. & Mueller, C.E. (1978). Factor analysis: Statistical methods and practical issues. Beverly Hills, CA: Sage.

Klitzner, M., Fisher, D., Stewart, K., & Gilbert, S. (1991). Report to the Robert Wood Johnson Foundation on Strategies for Early Intervention with Children and Youth to Avoid Abuse of Addictive Substances. Bethesda, MD: Pacific Institute for Research and Evaluation.

Le Blanc, M. (1990, September). Family Dynamics, Adolescent Delinquency and Adult Criminality. Paper presented at the Society for Life History Research Conference. Keystone, CO.

Mouzakitis, C.W. (1981). Inquiry into the problem of child abuse and juvenile delinquency. In R.J. Hunner and Y.E. Walker (Eds.), Exploring the relationship between child abuse and delinquency. Montclair, NJ: Allenheld, Osmun and Co.

National Institute on Drug Abuse (1985). 1985 National household survey on drug abuse questionnaire. Rockville, MD: National Institute on Drug Abuse.

Nurco, D.N., Balter, M.B., & Kinlock, T. (1994). Vulnerability to narcotic addiction. Journal of Drug Issues, 24, 293-314.

Pedhazur, E.J. (1982). Multiple Regression in Behavioral Research. 2nd ed. New York: Holt, Rinehart and Winston.

Rahdert, E. & Czechowicz, D. (Eds.) (1995). Adolescent Drug Abuse: Clinical Assessment and Therapeutic Interventions. Rockville, MD: National Institute on Drug Abuse.

Sirles, E.A. (1990). Dropout from intake, diagnostics, and treatment. Community Mental Health Journal, 26, 345-360.

Straus, M.A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. Journal of Marriage and the Family, 41, 75-88.

Straus, M.A. (1983). Ordinary violence, child abuse, and wife-beating, What do they have in common? In D. Finkelhor, R.J. Gelles, G.T. Hotaling and M.A. Straus (eds.), The Dark Side of Families: Current Family Violence Research. Beverly Hills, CA: Sage.

Straus, M.A., Gelles, R.J. & Steinmetz, S.K. (1980). Behind closed doors: Violence in the American family. New York: Doubleday/Anchor.

Substance Abuse and Mental Health Services Administration (SAMHSA) (1996). Preliminary data from the 1994 National Household Survey on Drug Abuse. Rockville, MD: SAMHSA.

Szapocznik, J. & Kurtines, W.M. (1989). Breakthroughs in Family Therapy with Drug-Abusing and Problem Youth. New York: Springer Publishing Co.

Teplin, L.A., & Swartz, J. (1989). Screening for severe mental disorder in jails: The development of the referral decision scale. Law and Human Behavior, 13: 1-18.

Tolan, P., Ryan, K. & Jaffe, C. (1988). Adolescents' mental health service use and provider, process, and recipient characteristics. Journal of Clinical Child Psychology, 17, 229-236.

U.S. Department of Justice (1983a). Prisoners and Alcohol. ACJ-86223. Washington, D.C.: Bureau of Justice Statistics Bulletin.

U.S. Department of Justice (1983b). Prisoners and Drugs. NCJ87575. Washington, D. C.: Bureau of Justice Statistics Bulletin.

Weisz, J.R, Weiss, B., Han, S.S., Granger, D.A. & Norton, (1995). Effects of psychotherapy with children and adolescents revisited: A meta-analysis of treatment outcome studies. Psychological Bulletin, 117, 450-468.

Wish, E.D., O'Neil, J.A., Crawford, C.A., & Baldau, V. (1992). Lost opportunity to combat AIDS: Drug abusers in the criminal justice system--An update. In Mieczkowski, T. (Ed.) Drugs, crime and social policy. Boston, MA: Allyn and Bacon.